VOLUME 9 • ISSUE 101 • OCTOBER 2018

The NICHD Connection

October 2018

INSIDE THIS ISSUE

EDITOR IN CHIEF
Shana R. Spindler, PhD
Shana.Spindler@gmail.com

LAYOUT & DESIGN
Nichole Swan

BACKGROUND PHOTOGRAPHY
See **Credits page** online

CONTRIBUTORS
Suna Gulay, PhD
Ari Lechsinska
Michael Lee, Jr.
Mitch Lee
Lauren Tracy

NIH *Eunice Kennedy Shriver* National Institute of Child Health and Human Development

Thoughts of a Postbac: From Stars to Cells, A Former Postbac's Journey to Becoming a Physician-Scientist

By Michael Lee, Jr.

Thoughts of a Postbac

Michael Lee, Jr.

In our first week of medical school, my new classmates and I were asked to reflect amongst ourselves why we chose to go into medicine. After several long days of orientation, our first instinct was to dismiss it as just another icebreaker exercise. But as I asked myself once more why I am pursuing medicine, I realized how easy it is in our busy training to lose sight of the forest for the trees. So, *why* do I want to be a physician-scientist? In this "Thoughts of a Postbac" article, I want to share the life experiences that led to my decision to pursue MD/PhD training, as a perspective to offer to postbacs similarly considering their training paths.

Ironically, my interest in medicine and molecular biology—the study of life's tiny engines—began with stars, the giant powerhouses of the universe. I was obsessed with astronomy as a teenager. I would spend hours gazing at the night sky, marveling at constellations (yes, I was a nerdy kid). I still remember watching a documentary featuring the astrophysicist and great science communicator, Dr. Neil deGrasse Tyson, in which he said: "We are a part of this universe; we are in this universe, but perhaps more important than both of those facts, is that the universe is in us." We're made of star-stuff! This astounding fact that we are all, quite literally, connected by our atoms to a common stellar heritage sowed in my mind an interest in science and a desire to relate more deeply with people in my future career.

In college, I majored in biochemistry and pursued the pre-medical track thinking it would be an ideal way to fulfill my interest in science and a desire to help others. In the summer after my freshman year, I joined a cell biology lab out of a curiosity for the research process. I loved science as a kid, but I had only a vague idea what scientists actually do in a lab. To my surprise, I fell quickly in love with

(continued on page 3)

Letter from the Editor

The future is unknown, but that's a good thing. It means anything is possible. No matter how much planning, the unexpected never ceases to arise. You might think you want to be a doctor, and then you experience your first research discovery. You've always wanted to pursue a PhD, but then you meet a patient. No fellow is better suited to contemplate the unknowns of the future than our postbacs (well, maybe our summer interns are, but this issue is about postbacs, so…).

Postbaccalaureate studies are a time to explore all academic and career options. It's like going to an ice cream shop and tasting different flavors on tiny plastic spoons before committing to a scoop. Do you go with your longtime favorite to make sure you still like it, or do you sample something completely new, knowing that it's not an entire bowl if it's less than desirable? Most postbacs I've met do exactly what they should—use a heck of a lot of tiny spoons.

Last month, former postbac fellow Miles Oliva described his journey to becoming a research coordinator in pursuit of a master's in public health. This month, in our **"Thoughts of a Postbac" column**, former postbac Michael Lee recounts his path to an MD/PhD program. And check back next month for former postbac fellow Amber Simmons' story of becoming a physician-in-training. For postbacs who need a confidence boost during their decision making, postbac author Lauren Tracy recaps the **career development discussion** with Dr. Elaine Ostrander from last month's NIH Research Festival program.

As postbacs navigate these life-changing decisions, mentorship is paramount. This is evidenced by the fact that all 2018 NICHD Mentor of the Year awardees were nominated by at least one postbac. Check out this year's winners, with several kind words from their nominators, on **page 10**. For additional resources beyond mentorship, NICHD postbacs can always turn to our two new postbac reps, Ari Lechsinska and Mitch Lee. If you have any questions or comments about postbac activities at the NIH or NICHD, please feel free to reach out to them (contact info on **page 6**). One activity to consider is the annual NICHD postbac course, which starts this month. Visit the **October announcements** for additional information.

Now I'm going to dig into the Trader Joe's pumpkin ice cream sitting in my freezer, no tiny spoon needed.

Your Editor in Chief,
Shana R. Spindler, Ph.D.

Questions, comments, or ideas? Contact our editor at **Shana.Spindler@gmail.com**.

Thoughts of a Postbac: From Stars to Cells

(continued from page 1)

research. The lab soon become my second home. I enjoyed the exercise of performing experiments, manipulating reagents, and analyzing data to support or refute hypotheses. But, more importantly, I was transformed by the idea that science can answer meaningful questions about real biological processes through the design of well-thought-out experiments. This was my first encounter with discovery and I was hooked.

Still, as I grew more passionate for the lab, I remained equally interested in the clinic, motivated by the human element in medicine. I volunteered and shadowed physicians at various hospital departments where I learned that behind every sick patient is a living story. A 14-year-old boy worried about whether he could still go to school with cancer. A middle-aged woman was burdened by 20 years of treatments for recurrent Cushing's disease. A 70-year-old man and his wife were dealing with his recent Parkinson's diagnosis and the prospects of palliative care. These were real people, not just illnesses. But I also learned that with every patient there is a physician that can uniquely care for and relieve suffering, using sincerity, compassion, and expertise. These profoundly human interactions in the clinic drew me closely to medicine.

By my senior year of college, I was torn between a research and a medical career. I was also quite burned-out with school, so I decided to do a two-year postbac fellowship at the NIH to consider both careers more deeply. Looking back, the NIH was the ideal environment to cultivate my career outlook. In the lab of Dr. Henry Levin, studying how transposons integrate their DNA into genomes, I learned how to think more independently and creatively to tackle basic biological questions; I also learned the sobering amount of resilience it takes to do good science. At the same time, by hearing leading physician-scientists on campus talk about their translational work, I learned how much of medicine is still unresolved with persistent questions of how and why disease unfolds. But I was even more inspired by the capacity of basic investigation to steadfastly bridge the knowledge gaps and, eventually, improve our care of patients. Altogether, my experiences at the NIH convinced me that I could not pick either science or medicine, but I had to choose both.

Today, I am training to be a physician and a scientist. I want to someday see patients in the clinic and take their clinical problems into the lab to interrogate mechanisms. I want to translate discoveries into improved therapies and bring them back to the clinic—for the better care of patients. This is why I want to be a physician-scientist.

The Recipe for Success in Science? Friends, Family, and Tenacity

By Lauren Tracy

On September 14, 2018, the NIH Women Scientist Advisors (WSA) Committee invited Dr. Elaine Ostrander to share her story as a scientist, during which she described important traits that helped her succeed in a challenging field. In a talk that diverged from the data heavy presentations typically held on campus, Dr. Ostrander recalled how she became Chief of the Cancer Genetics and Comparative Genomics Branch at the National Human Genome Research Institute (NHGRI) and one of the founders of the Dog Genome Project.

Before reaching her position as a branch chief at the NIH, Dr. Ostrander held a variety of jobs. Her early jobs included positions as a dishwasher and an autopsy assistant. But she attributes her spotless home and first paid research position to her time as a janitor. While attending the University of Washington, Seattle as an undergraduate student, she walked into a lab during her janitorial duties. Enamored by the environment, Dr. Ostrander convinced them to allow her to work there. This was a turning point for Dr. Ostrander, because it showed her that if she believed in herself she could get other people to believe in her as well.

Her self-assurance as a scientist later helped her attain a postdoctoral position at Harvard after earning a PhD from the Oregon Health Sciences University. Dr. Ostrander repeatedly highlighted self-confidence as a critical trait for success in Science, Technology, Engineering, and Math (STEM). Additionally, she noted that it is something she tries to instill in her trainees and should be a priority for all mentors. Furthermore, Dr. Ostrander stressed effective writing as one of the most important skills for scientists. In fact, she makes writing the number one priority for herself and her trainees. To improve one's writing skills, Dr. Ostrander suggests practicing frequently, taking writing classes, and writing review articles.

Beyond academic skillsets, Dr. Ostrander outlined four essentials to make time for: family, health, friends, and giving. These are the things one can fall back on if things get rough, career-wise. She specifically stressed the importance of family and noted that she is most proud of this aspect of her life. For the remainder of the session, Dr. Ostrander fielded questions from the audience and offered candid advice.

Questions from the audience included inquiries about work-life balance and how to overcome setbacks. Dr. Ostrander revealed that she and her husband plan their schedules months in advance so that they have time for both work and their family. As for dealing with research and career setbacks, Dr. Ostrander simply cited tenacity as the solution. While challenges in STEM careers are unavoidable, one can transcend them with persistence and a firm support network.

Meet Our New NICHD Postbac Reps

The NICHD Connection would like to introduce NICHD's new postbac IC representatives, **Arianna (Ari) Lechsinska** and **Mitch Lee**. Postbac IC reps serve on the NIH-wide Pre-IRTA Committee on behalf of the institute's postbac fellow population. They also work closely with the NICHD Office of Education to plan events of interest to the postbacs, whether academic or social. NICHD currently has over 70 postbacs who are conducting both clinical and basic science research.

ARI LECHSINSKA

Hello fellows of NICHD! My name is Ari, and I am a second-year postbac who will be taking on the position of postbac representative along with my friend, Mitch Lee. I hail from the foothills of the Adirondacks in upstate New York and went to University at Albany, State University of New York (UAlbany) for undergraduate studies in biological sciences. I've always had a love of nature and learning and found my passion for biomedical research when I was a senior in high school.

My first experience working on an independent research project occurred under the leadership of Dr. Marlene Belfort at UAlbany, where I studied the impact of Group II intron retrotransposition events on the evolution of genome structure in *Lactococcus lactis*. From there, I was honored to begin my research here at NIH in the lab of Dr. Henry Levin under the mentorship of Dr. Zelia Worman. We study the impact of retrotransposon insertions on gene expression in regions associated with human neurological disorders, such as schizophrenia and migraine disorder. I am currently applying for graduate studies in genetics, primarily in the Boston area, as I would like to pursue an industry career after my PhD.

I look forward to assisting the Office of Education as we develop events and activities for the institute's postbac fellows to engage with professionals in the field and with each other. NIH provides a unique learning environment and so many opportunities for career advancement and professional development. I cannot overstate the importance of getting involved during your time here! Mitch and I are here also to help you overcome the many difficulties that can arise during this very stressful and exciting time. We look forward to getting to know you and seeing you around campus!

(continued on page 6)

Meet Our New NICHD Postbac Reps

(continued from page 5)

MITCH LEE

Hi, all! I grew up primarily in San Antonio and Dallas, Texas, with a brief stint outside the Bay Area of California. I graduated from Duke University in 2017 with a B.S. in biology concentrated in cell and molecular biology, a minor in chemistry, and a Science and Society certificate. While at Duke, I completed independent studies in Dr. Nicolas Buchler's lab, where I studied mechanisms and dynamics of oscillating and bistable synthetic gene circuits in *E. coli*. Having discovered an interest in microbiology and feeling compelled to apply it toward investigating pathogens, I spent the summer before my senior year interning at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) in Dr. Harris Bernstein's lab, where I worked to identify genes required for secretion of the fragilysin toxin by enterotoxigenic strains of *Bacteroides fragilis*. After graduating from Duke, I returned to the NIH to join Dr. Matthias Machner's lab, where we work to understand how effector proteins deployed by the opportunistic pathogen *Legionella pneumophila* hijack and modulate host pathways to enable this intracellular bacterium to survive and replicate in human macrophages.

I am excited to work with Ari and the NICHD Office of Education to facilitate the education and professional development of postbacs at the NICHD! As second-year postbacs, Ari and I know the importance of getting involved. But diving in can be daunting and difficult, so we're here to help. Whether by organizing events, facilitating introductions to people and organizations, or talking one-on-one, we want to help you engage and navigate the opportunities and challenges you will encounter at the NICHD (and the NIH more generally). Please let us know what we can do. We're eager to hear and execute great ideas about how to enhance your postbac experiences!

You can contact Ari and Mitch at **arianna.lechsinska@nih.gov** and **mitch.lee@nih.gov**.

The Rep Report

By Suna Gulay, PhD

As the current NICHD Basic Sciences IC Representative, I represent NICHD postdoctoral fellows at the FelCom meeting every month and share the latest news with you here. Do you have a concern or question that you want brought up at the next meeting? Contact me at **suna.gulay@nih.gov**!

Dear Fellows,

FAES will begin a new seminar series on professional development. They are currently seeking topic suggestions. Email FelCom FAES liaisons, **Patrick Wright** and **Kathy Reding**, with your ideas. Thus far, the topics to be covered are:

- Bench-to-Business
- Bench-to-Bedside
- Nonprofit Leadership
- Healthcare Leadership
- Creativity in Leadership
- Being a Supportive Leader
- Mentorship
- Women in Science and Leadership

This new seminar series will complement the FelCom Career Development Committee's panels. This committee brings in junior and senior professionals to talk with NIH trainees about various career paths and the skills fellows need to succeed. You can follow their events on the **OITE Upcoming Events list**. **The next panel, "Careers in Science Policy," will take place on Tuesday, October 16, between 3 to 5 p.m. in Building 50, Room 1227.** If you are interested in organizing panels of your choice or supporting the trainee community in other ways, contact my co-chair **Fany Messanvi** or me.

Volunteer to plant trees and contribute to the future of the planet! **FelCom Service and Outreach Committee is organizing an event with Casey Trees on Saturday, October 27.** Email the chair, **Sarah Hawes**, by Wednesday, October 17 to register.

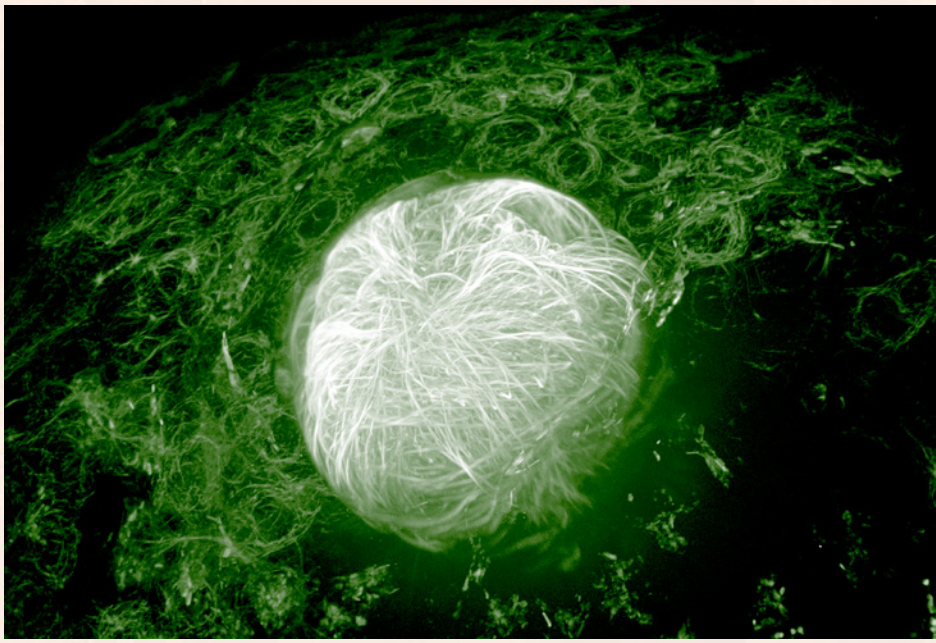
Mom-Dad-Docs, a supportive community of NIH trainees who are parents, is asking fellows to be more involved and to help the organization. Most importantly, if you have any ideas of topics you would like them to cover in their monthly events, contact **Ulrike Klenke**.

The Visiting Fellows Committee is organizing the **11th International Opportunities Expo on Thursday, October 18, between 12 to 5 p.m. in Building 10, FAES Educational Center.** Register **here**. You can follow this committee's upcoming events, including their **Halloween party set to take place on Friday, November 2**, using their **calendar**.

Have a productive month!

Scientific Retreat Image Competition Winner for 2018

Congratulations to **Dan Castranova** of the Weinstein lab for winning the 2018 scientific retreat image competition. His image of a transgenic zebrafish embryo eye showing microtubules earned him first place among steep competition.



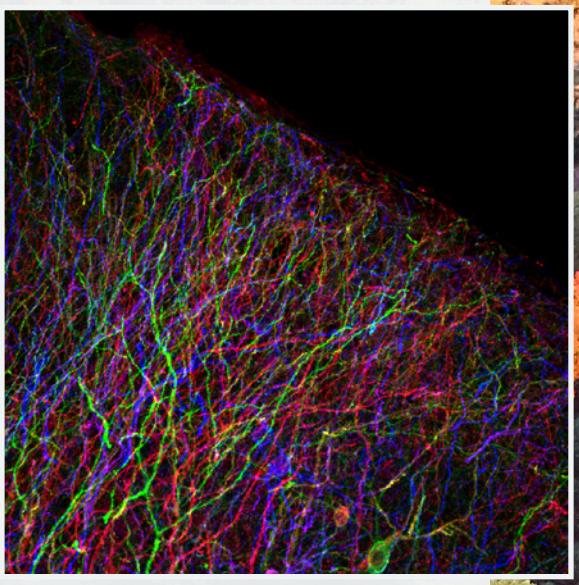
(continued on page 9)

The criteria by which image submissions were judged: composition, color palate, size and resolution, subject, overall image quality, and likeness to art versus a scientific figure.

Scientific Retreat Image Competition Winner for 2018

(continued from page 8)

Bonus certificates were awarded for the following categories:

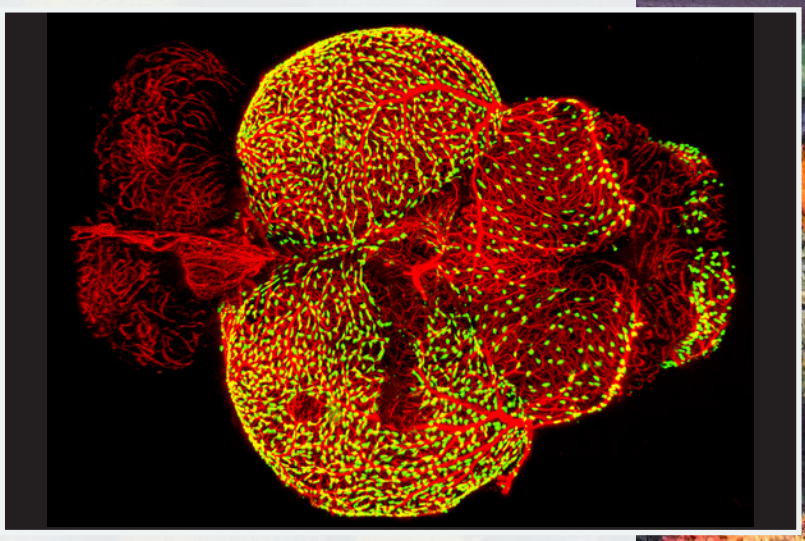


RUNNER UP: PETROS LAB

"All the Colors of the Brainbow." 50 µm vibratome section from Nkx2.1-Cre; Brainbow mouse, in which each MGE-derived cortical interneuron undergoes stoichastic Cre-mediated recombination events resulting in cells being labeled with a unique hue.

CREATIVITY: SAM CHOUDHURY AND ROSARIO VICIDOMINI OF THE SERPE LAB

Fruit flies with red fluorescent eyes indicating a successful genome editing event via CRISPR.



SUPERSTAR: MARINA VENERO GALANTERNIK AND COLLEAGUES OF THE WEINSTEIN LAB

FASEB Image Award Winner, Fluorescent Granular Perithelial cells (green) and blood vessels (red) in the adult zebrafish brain.

Congratulations to the 2018 NICHD Mentors of the Year

The NICHD Mentor of the Year Award is an opportunity to recognize individuals whose mentoring has made a difference in someone's life at NIH. The two mentoring award categories are fellows and investigators. Nominations were invited from all trainee groups in the Division of Intramural Research (DIR) and the Division of Population Health Research (DIPHR). Each nominator had to write a statement, on which the selection committee based its decisions. The selection committee included NICHD clinical and postdoctoral fellows, graduate students, and postbac fellows.

This year, we honor the following Mentor of the Year recipients with a few sentiments from their mentee's nomination letters:

DIR FELLOW

Marina Venero Galanternik, Ph.D.

Dr. Galanternik is a postdoctoral fellow in the Weinstein lab. She was nominated by her mentees, Ryan Gober (postbac) and Tuyet Nguyen (summer intern), and her advisor, Dr. Brant Weinstein.

> "To be able to see someone so excited about what they work on each and every day, even when results don't always materialize, has been extremely motivating and encouraging for me... She applies the same energy and enthusiasm that she shows in her own work to helping me to succeed in my own career."

> "When mistakes are made, she is never condescending, turning the situation into a learning opportunity for both the student and herself... Her open and giving nature and her ability to connect with her students have encouraged me to work hard to achieve my own potential."

DIR INVESTIGATOR

LiQi Li, Ph.D.

Dr. Li is a staff scientist in the Love lab. She was nominated by her mentee, Daniel Stamos (postbac).

> "Dr. Li's warmth has always demonstrated a genuine interest in my life and has been instrumental in establishing the trust and collegiality that are crucial for a strong mentor-mentee relationship."

(continued on page 11)

Congratulations to the 2018 NICHD Mentors of the Year

(continued from page 10)

DIPHR FELLOW

Jeremy Luk, Ph.D.

Dr. Luk is a postdoctoral fellow in the Gilman lab. He was nominated by his mentees, Kellienne Sita (postbac) and Jacob Miller (summer student), and his colleague Ulrike Klenke (postdoc).

> "His willingness to dedicate his time on a consistent basis is unlike any mentor I have known... I have been able to learn how to efficiently build a project from conceptualization to journal submission."

> "Jeremy embodies the paragons of mentorship and professionalism. He possesses an unparalleled passion for research, an endless curiosity and an unrivaled work ethic. His analytic and mentorship skills are surpassed only by his character and approachability."

DIPHR INVESTIGATOR

Stephan Gilman, Sc.D.

Dr. Stephan Gilman is a principal investigator and chief of the DIPHR Social and Behavioral Sciences Branch. He was nominated by his mentee, Kuba Jeffers (postbac).

> "Stephen cultivates an ideal work environment for personal and professional growth. He manages to maintain a clear vision for the branch while allowing individuals the freedom to determine their own priorities...Stephen leaves his door open—both literally and figuratively—to everyone in the branch. He welcomes spontaneous feedback and encourages ingenuity."

Upcoming NIH-Wide Office of Intramural Training and Education (OITE) Events

For more information and registration, please visit **Upcoming OITE Events**.

OITE Orientation for Graduate Students and Postdoctoral Fellows (October 2)

Graduate Partnerships Program Information Session (October 4)

Choosing and Applying to Medical School (October 5)

OITE Orientation for New NIH Postbacs: Getting What You Came For (October 5)

Workplace Dynamics III: Conflict & Feedback (October 9)

Ethics in Research Training for Postbacs and Grad Students (October 10)

FELCOM: Careers in Science Policy (October 16)

Postbac Seminar Series (October 16)

Ethics in Research Training for Postbacs and Graduate Students (October 26)

Planning for Career Satisfaction and Success (October 30)

October Announcements

NICHD ANNUAL POSTBAC COURSE: PROFESSIONAL DEVELOPMENT AND CAREER EXPLORATION

Postbaccalaureate fellows are important to our NIH scientific workforce, and NICHD currently has about 70 postbacs conducting both clinical and basic science research in one of our intramural laboratories. When postbacs leave the NIH for professional school or other endeavors, we want our postbacs to have had an enriched research experience while feeling excited about their chosen career paths.

The course runs over lunchtime on Mondays, from 12 to 1 p.m., in Building 31, Conference Room 2A48 (A-wing, 2nd floor).

This unique, 9-week course is available for all NICHD postbacs, and the intent is to create a comfortable environment within a small group of peers to help postbacs improve analytical skills as scientists while expanding their knowledge of biomedical research and its relevance to human health.

SCHEDULE OF UPCOMING TOPICS

October 29	Speaking about Science, Scott Morgan
November 5	Science & Society: Ethics and Reproducibility, Mona Orr, PhD
November 26	Interviewing for Professional School, Scott Morgan
December 3	Science & Society: From Basic Science to Technology, Mona Orr, PhD

Stay-tuned for the final schedule, which will be announced very soon by email.

Topics will include *Life as a Primary Care Physician*, and a *Meet the Scientist* series with speakers working in industry, clinical and basic science research.

If you are interested in joining the class, please email Dr. Erin Walsh at **erin.walsh@nih.gov**. The group will be limited to 25 students to allow maximum participation and interaction with the instructors. All participants must attend at least seven of the nine classes.

If you have any further questions, Dr. Yvette Pittman or Dr. Erin Walsh will be happy to assist you (**yvette.pittman@nih.gov** and **erin.walsh@nih.gov**).

(continued on page 14)

October Announcements

(continued from page 13)

NICHD FELLOWS ADVISORY COMMITTEE: SEEKING NEW MEMBERS!

The Office of Education formed an advisory committee in 2016, and we are seeking several more dedicated members to help us develop and initiate academic support programs for the institute. Both domestic and visiting fellows are needed. We want to achieve a broad representation, culturally and academically, so we can address the needs of all our trainees at NICHD. The committee meets monthly to exchange ideas and informally discuss ways we can enhance and tailor the training experience within the NICHD intramural program

Some potential topics for our committee are how to:

- Increase the participation for training activities
- Expose fellows to various careers in science
- Identify teaching opportunities and internal and external research funding mechanisms
- Establish a structure for sharing scientific and career resources within the institute

***New this year, the advisory committee will also steer the 15th Annual NICHD Fellows' Retreat, to be held in Spring 2019.**
This includes developing the agenda/program, inviting speakers, reviewing abstracts, selecting fellow/student presenters, and moderating some of the sessions—it's a great service opportunity, plus you'll get to be part of the team that plans our biggest annual event for fellows!

Don't miss this opportunity to serve your intramural NICHD community.

The committee meets **once a month on Thursdays, from 3 to 4 p.m.** Our Fall dates are listed below:

- October 18
- November 8
- December 6

Please contact Dr. Erin Walsh at **erin.walsh@nih.gov** if you are interested in joining the group.

(continued on page 15)

October Announcements

(continued from page 14)

STUDY IN FRANCE WITH INSERM EXCHANGE PROGRAM

NICHD has established an exchange with Inserm (Institut National de la Sante et de la Recherche Medicale) in France, which provides a unique opportunity for American and French scientists to obtain postdoctoral training with French and American mentors, respectively.

We will train one fellow in DIR for a two-year period and send one "graduating" postdoctoral fellow from NICHD (visiting fellows are eligible) to a participating Inserm lab in France, for what essentially would be a second postdoc. To facilitate strong research collaborations between NICHD and Inserm, there will also be an opportunity for the awardees' mentors to visit, in both directions.

Our projected start date for trainees, for both institutes, is June 3, 2019.

If you are at the end of your training and may be interested in this program, please let the Office of Education know as soon as possible so we can work through the application process together.

NICHD fellows will very soon receive an email containing the application instructions, including a list of 16 Inserm laboratories that participate in the program.

Applications are due to Dr. Erin Walsh (erin.walsh@nih.gov) by Monday, December 31st.

October Events

THURSDAY, OCTOBER 11, 9:30 AM – 2 PM

"Identify the Career for You and Learn How to Build Your Network"

In this two-hour workshop, as part of the new Planning and Career Exploration (PACE) program, Drs. Faith Harrow (training director at NHGRI) and Yvette Pittman will introduce you to the career planning tools: My Individual Development Plan (**myIDP**) and Active Career Exploration (**ACE**). Using these tools, you will assess your skills, interests and values, see how they align with various career paths, and "build your network from zero"—all leading to career success.

Pre-registration required. If you would like to learn more about future offerings, please contact Dr. Yvette Pittman at **yvette.pittman@nih.gov**.

THURSDAY, OCTOBER 18, 3 – 4 PM

NICHD Fellows Advisory Committee Meeting

The committee meets monthly to exchange ideas and informally discuss ways we can enhance and tailor the training experience within the NICHD intramural program (see **October Announcements** for more information). Please contact Dr. Erin Walsh at **erin.walsh@nih.gov** if you are interested in joining the group.

MONDAY, OCTOBER 29, 12 – 1 PM

Annual Postbac Course: "Speaking about Science" with Scott Morgan

Building 31, Conference Room 2A48

If you are interested in joining the class, please email Dr. Erin Walsh at **erin.walsh@nih.gov**.